

Q10  
End

signals to separate receiver channels. It is to be understood that this method can be developed further and that further versions are feasible which are compatible with or similar to those described with reference to the MRI apparatus as claimed in claim 1.

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Please replace the paragraph on page 6, line 29 to page 7, line 2:

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Q11

According to the invention some RF coils will be combined into one receiver channel depending on the desired foldover direction, which combination is controlled preferably by appropriate software. If the desired reduction direction is the AP direction, four pairs of RF coils are formed, each pair comprising two RF coils; the RF signals of the coils 21 and 24, 22 and 23, 25 and 28, 26 and 27 are thus combined as can be seen in Figure 6. If, as an alternative, the desired reduction direction is the LR direction, the RF signals of the coils 21 and 22, 23 and 24, 25 and 26, 27 and 28 are combined according to the invention.

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#### **IN THE CLAIMS:**

Please amend Claims 1-9 as follows:

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- Q12  
Cont.
1. (Amended) A magnetic resonance imaging apparatus comprising:  
an RF coil system comprising at least two sets of at least two RF coils for detecting RF signals from a region of interest,  
at least two receiver channels for receiving and processing the detected RF signals, and  
a control unit for selectively routing at least one detected RF signal towards separate receiver channels for combining the RF signals of at least two RF coils

depending on the imaging parameters and for applying the combined RF signals to separate receiver channels, such that at least two detected RF signals can be combined to form a combined signal and the combined signal is applied to one particular receiver channel.

2. (Amended) A magnetic resonance imaging apparatus as claimed in claim 1, wherein said control unit is provided to combine the RF signals of several groups of at least two RF coils into a separate receiver channel.

3. (Amended) A magnetic resonance imaging apparatus as claimed in claim 1, wherein said RF coil system comprises two sets of four RF coils.

4. (Amended) A magnetic resonance imaging apparatus as claimed in claim 3, wherein said RF coil system comprises a birdcage head coil arrangement.

5. (Amended) A magnetic resonance imaging apparatus as claimed in claim 4, wherein said control unit is provided to combine the RF signals of RF coils arranged on opposite sides of the head.

6. (Amended) A magnetic resonance imaging apparatus as claimed in claim 4, wherein said control unit is provided to combine the RF signals of neighboring RF coils.

7. (Amended) A magnetic resonance imaging apparatus as claimed in claim 1, wherein said control unit is provided to select and/or combine the RF signals of at least two RF coils depending on the phase encoding direction.

8. (Amended) A magnetic resonance imaging apparatus as claimed in claim 1, wherein said control unit is provided to select and/or combine the RF signals of at least two RF coils depending on the desired SENSE reduction direction.

9. (Amended) A magnetic resonance imaging method, comprising the steps of:

detecting RF signals from a region of interest while using an RF coil system comprising at least two sets of at least two RF coils,

receiving and processing the detected RF signals while using at least two receiver channels, and

selectively routing at least one detected RF signal towards separate receiver channels for combining the RF signals of at least two RF coils depending on the imaging parameters and applying the combined RF signals to separate receiver channels, such that at least two detected RF signals can be combined to form a combined signal and the combined signal is applied to one particular receiver channel.